OIPE JC113
JAN 14 2005
PATENT & TRADEMARK OFFICE

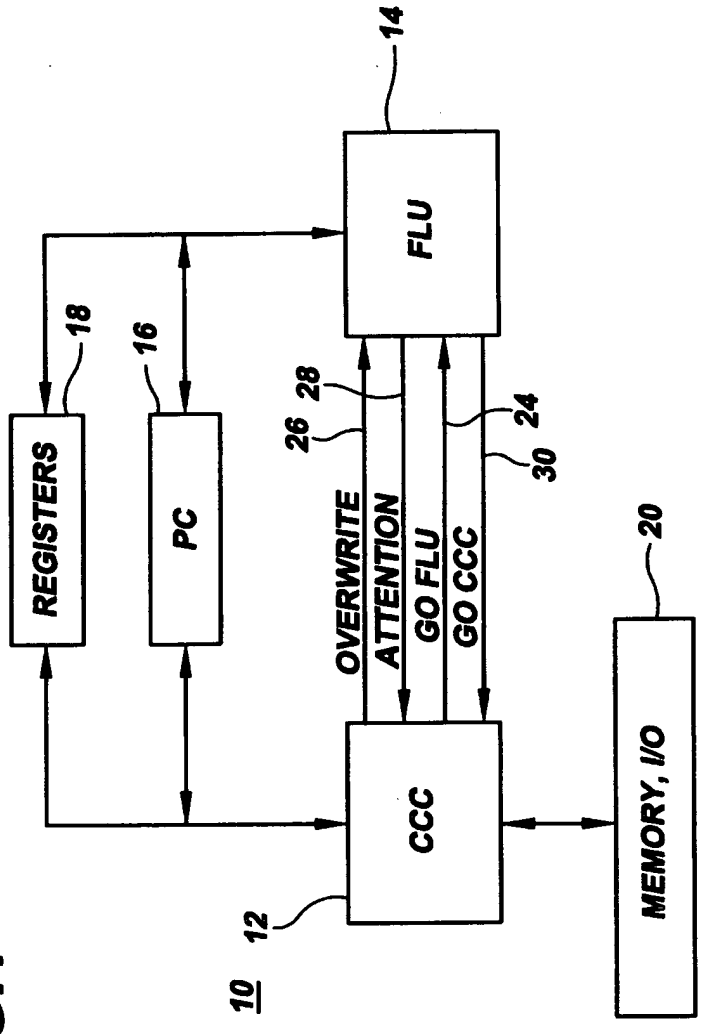


FIG.1

FIG.2
DETAIL OF FLU

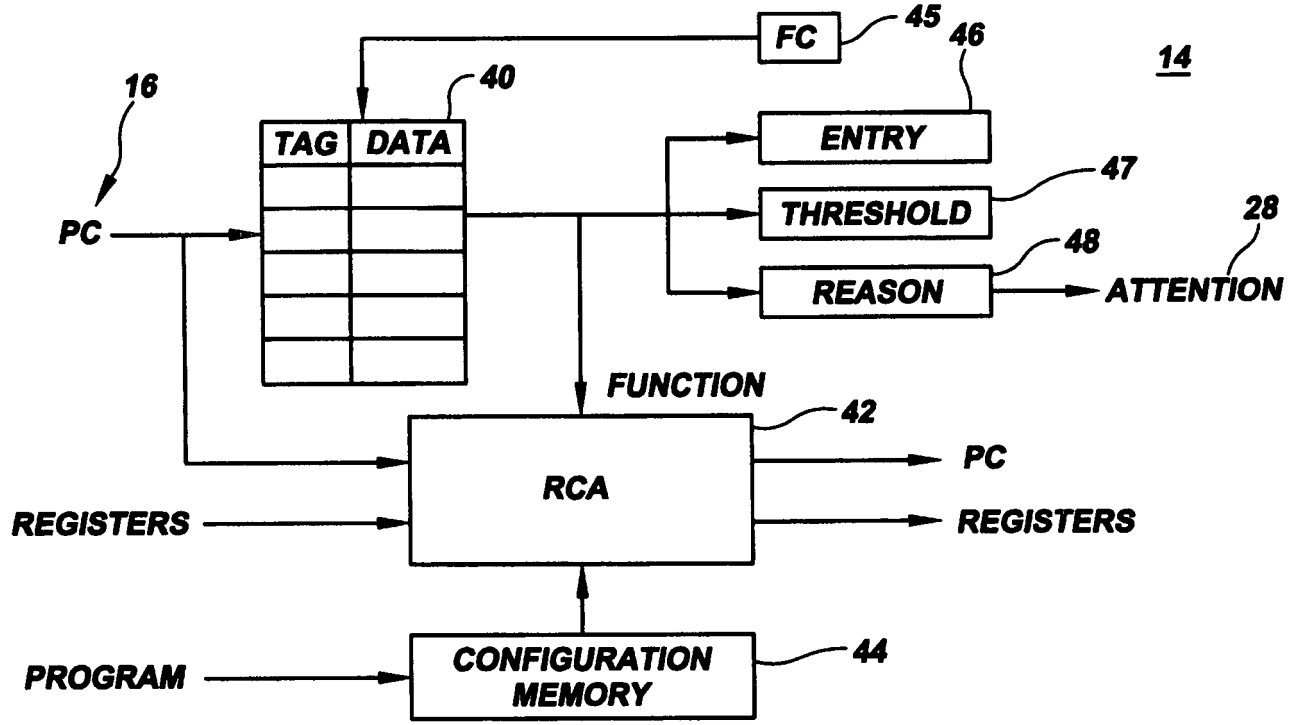


FIG.3
CACHE ENTRY LINE DETAIL

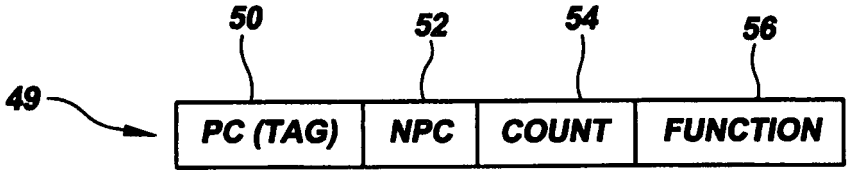


FIG.4
CCC FLOW

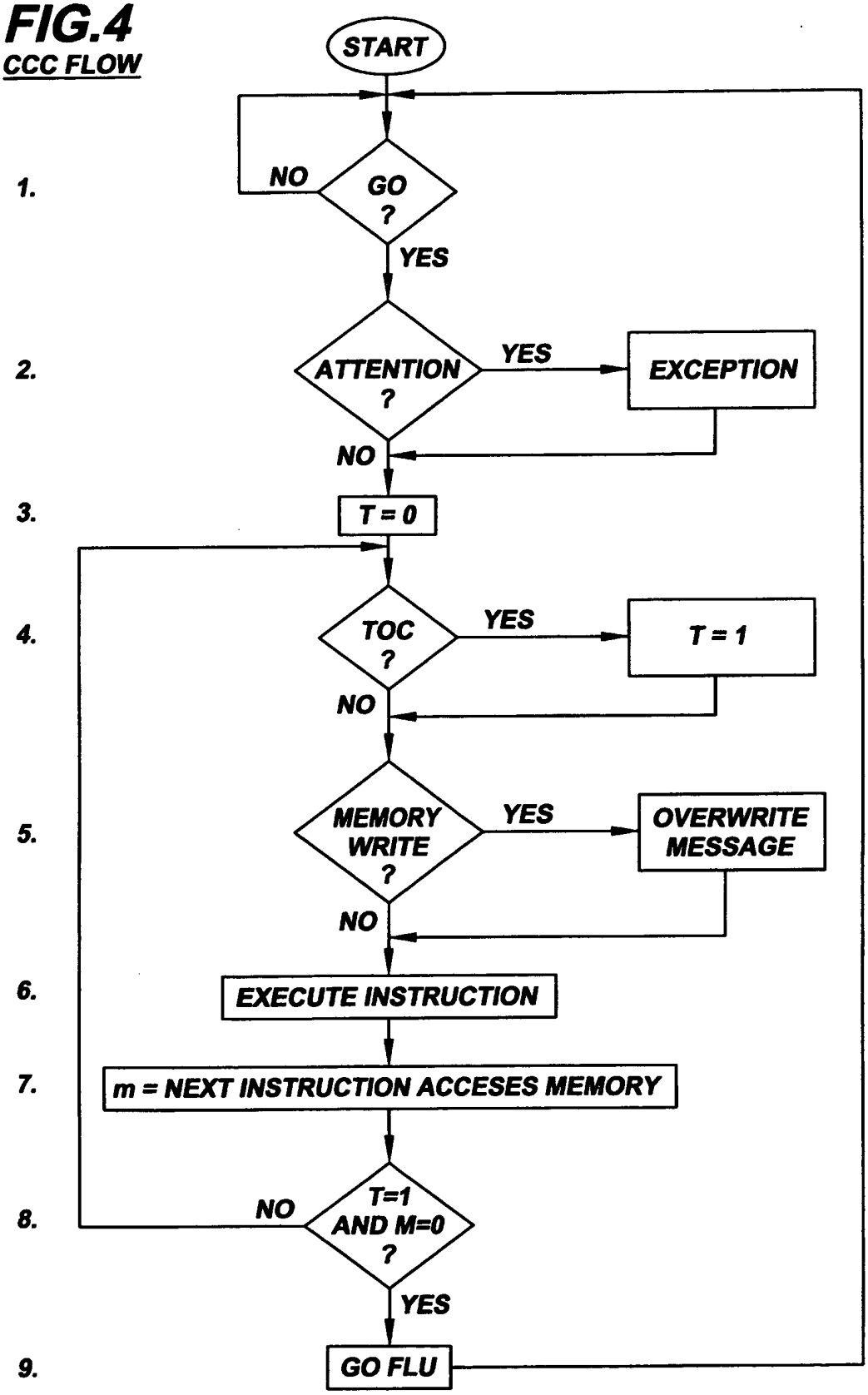


FIG.5 FLU FLOW DIAGRAM

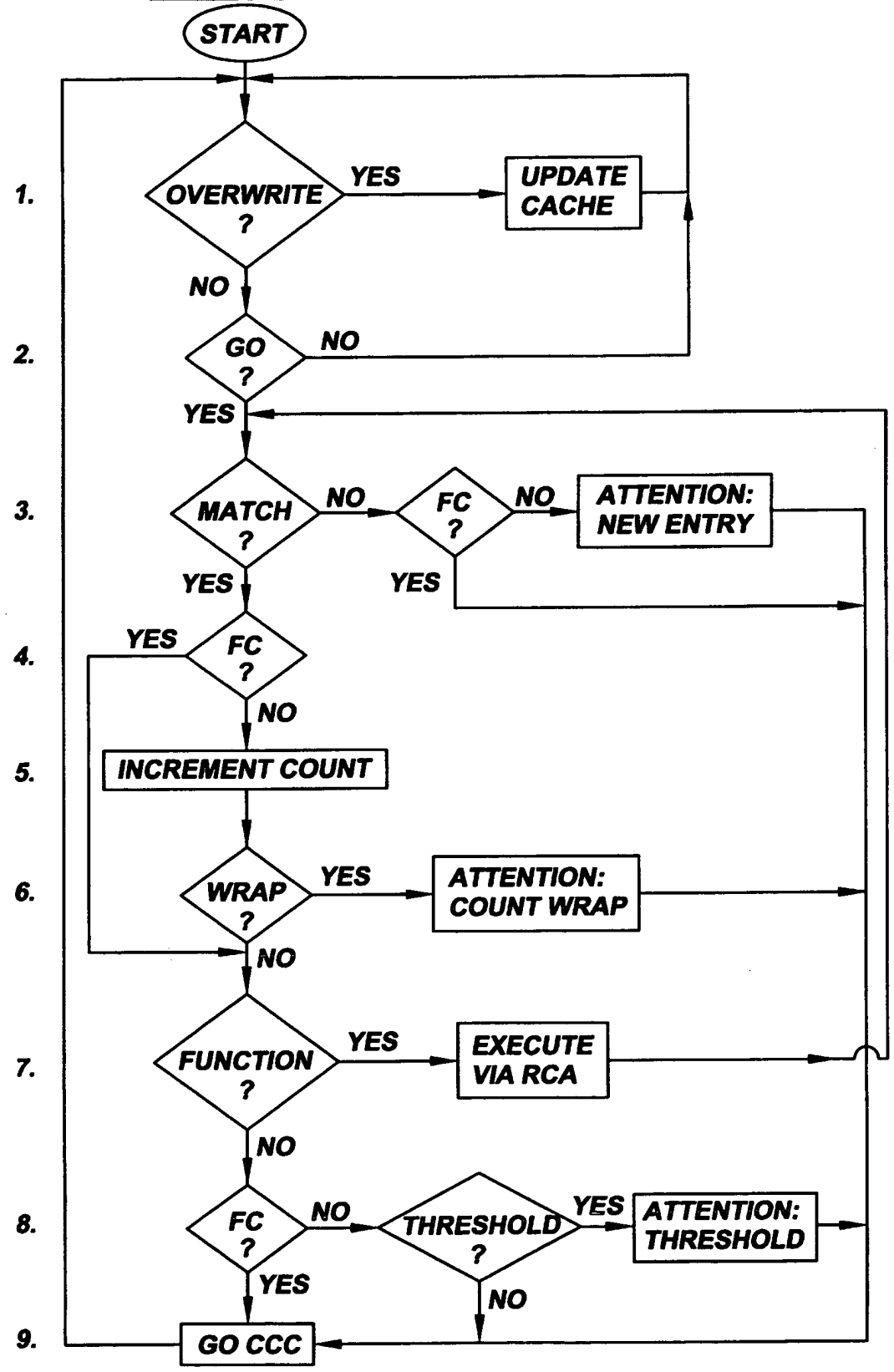


FIG.6

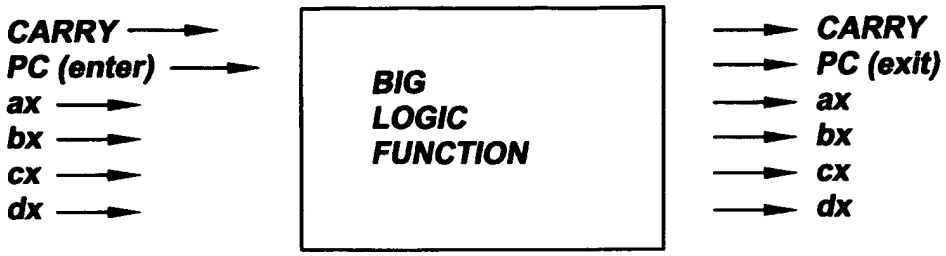


FIG.7A

COMPILING BY EXHAUSTIVE ENUMERATION

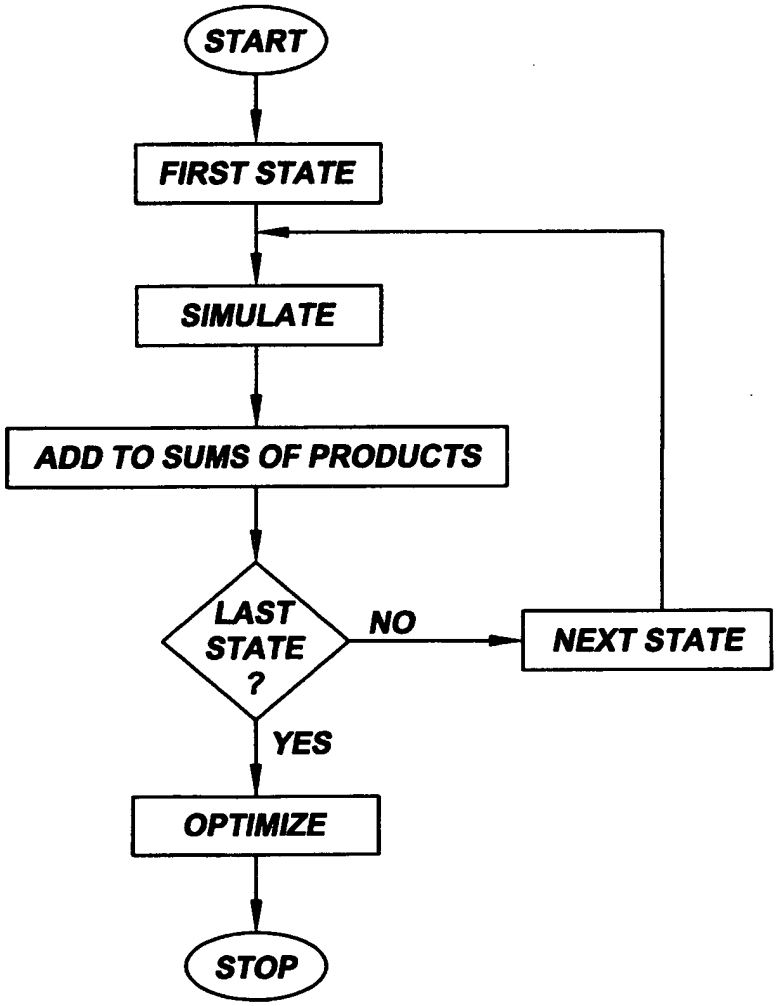


FIG.7B

COMPILING BY CONDITIONAL EXPRESSION EXPANSION

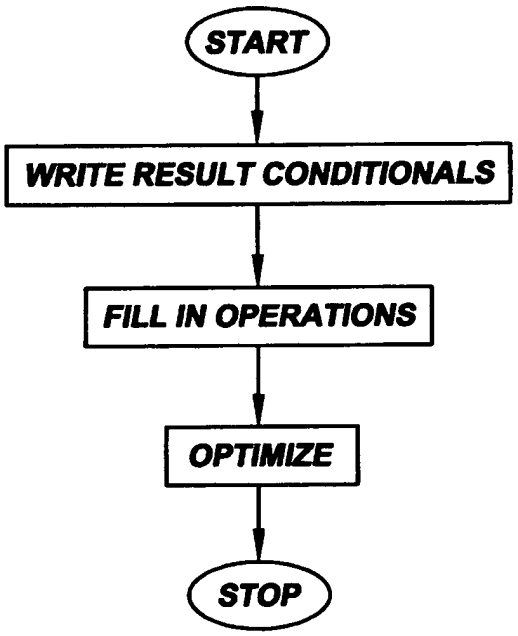


FIG.8
EXCEPTION ROUTINE FLOW

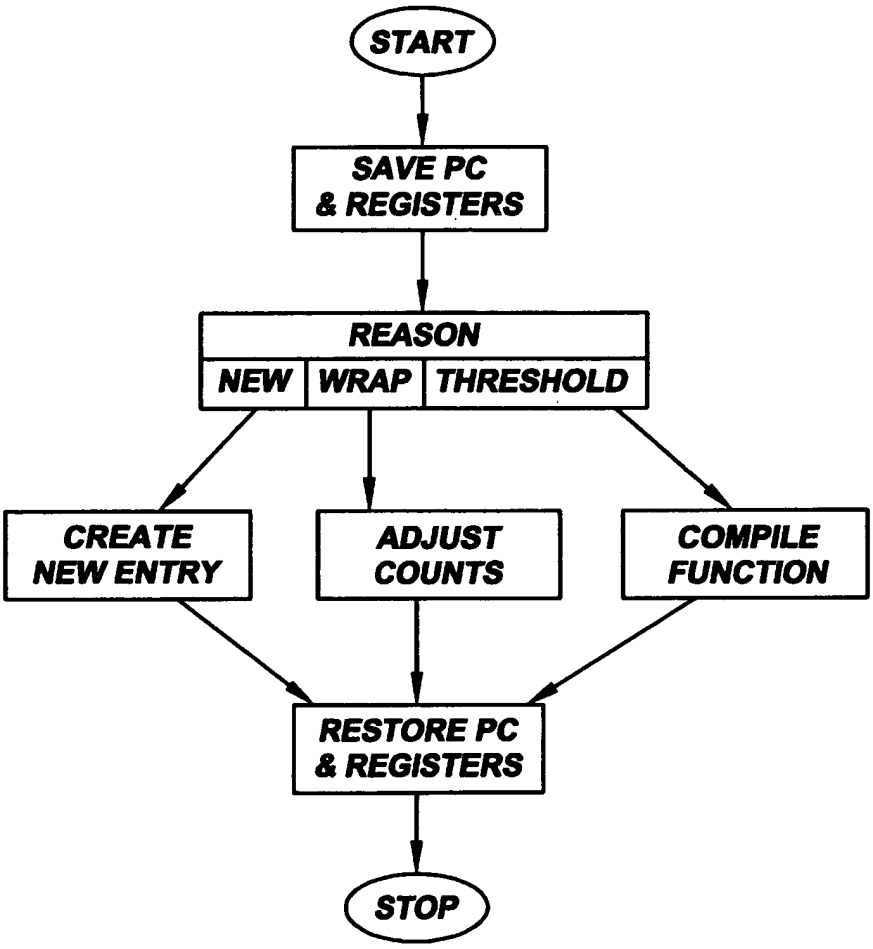


FIG.9

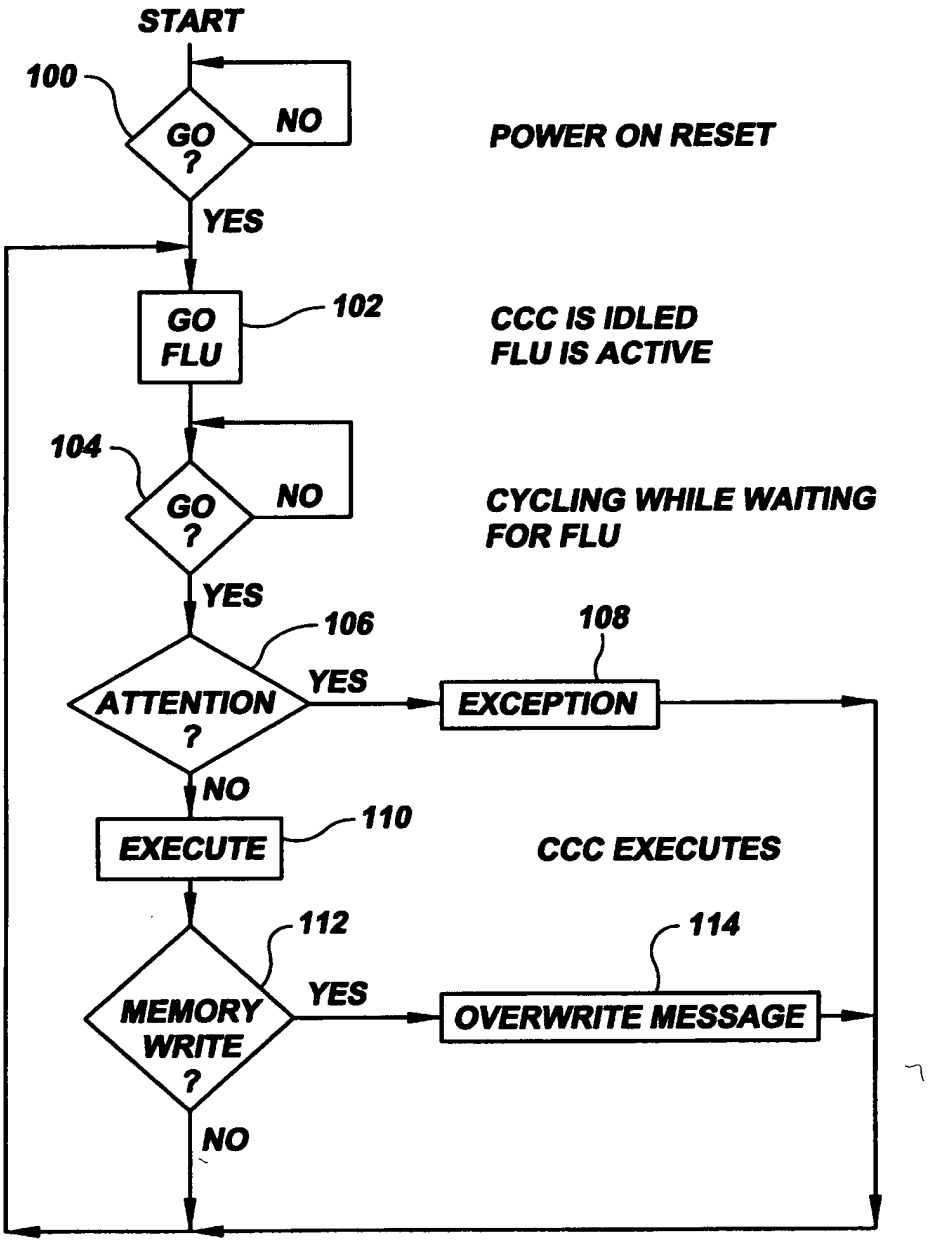
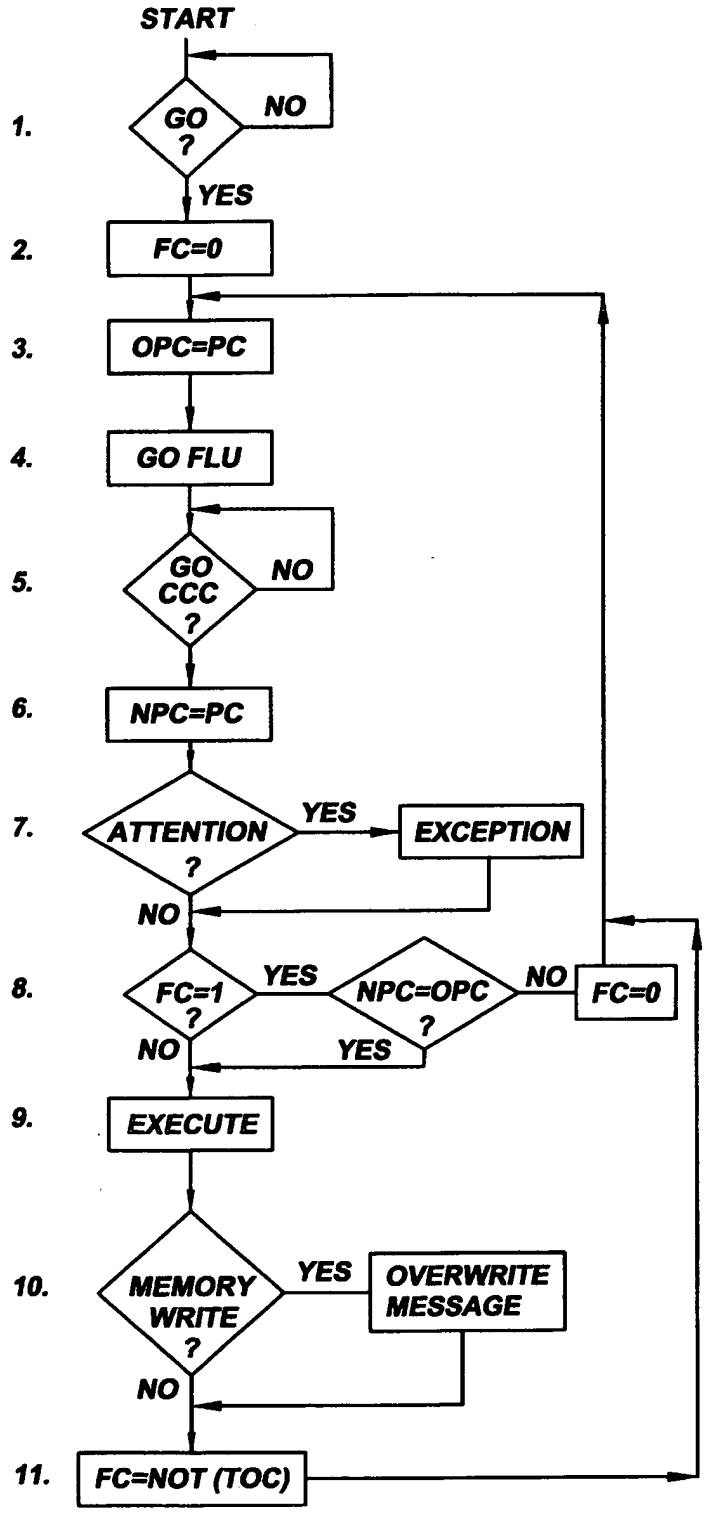

START
100
GO ?
NO
YES
POWER ON RESET
GO FLU
102
CCC IS IDLED
FLU IS ACTIVE
104
GO ?
NO
CYCLING WHILE WAITING
FOR FLU
YES
106
ATTENTION ?
YES
108
EXCEPTION
NO
EXECUTE
110
CCC EXECUTES
112
MEMORY WRITE ?
YES
114
OVERWRITE MESSAGE
NO

FIG. 10



1. REMAIN IDLE UNTIL GIVEN FIRST GO (RESET) SIGNAL.

2. INITIALIZE FLU "FREEZE CACHE" STATE TO "NOT FROZEN".

3. SAVE CURRENT PC IN OPC.

4. IDLE CCC AND SEND GO SIGNAL TO FLU.

5. WAIT FOR "GO CCC" FROM IDLE FLU.

6. GET NEW VALUE OF PC IN NPC.

7. IF FLU HAS SIGNALLED ATTENTION, PROCESS EXCEPTION.

8. IF THE FLU CACHE IS FROZEN, BUT NPC ≠ OPC, INDICATING THAT A LOGICAL FUNCTION WAS EXECUTED, UN-FREEZE THE CACHE AND GO TO 3.

9. EXECUTE THE INSTRUCTION AT PC IN THE CONVENTIONAL WAY.

10. IF THE INSTRUCTION WROTE MEMORY, SEND AN OVERWRITE MESSAGE TO THE FLU. PROCEED TO 11.

11. FREEZE THE FLU CACHE IF THE LAST INSTRUCTION IS NOT A TRANSFER OF CONTROL, OTHERWISE, UN-FREEZE IT. GO TO 3.